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## Investigating the influence of performance measurement on learning, entrepreneurial orientation and performance in turbulent markets

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*Published in:*  
International Journal of Contemporary Hospitality Management

*DOI:*  
[10.1108/IJCHM-11-2017-0744](https://doi.org/10.1108/IJCHM-11-2017-0744)

*Publication date:*  
2019

*Document Version*  
Peer reviewed version

[Link to publication in Discovery Research Portal](#)

### *Citation for published version (APA):*

Taheri, B., Bitici, U., Gannon, M. J., & Cordina, R. (2019). Investigating the influence of performance measurement on learning, entrepreneurial orientation and performance in turbulent markets. *International Journal of Contemporary Hospitality Management*, 31(3), 1224-1246. <https://doi.org/10.1108/IJCHM-11-2017-0744>

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## ABSTRACT

**Purpose:** This study examines how comprehensive performance measurement systems (CPMS) influence entrepreneurial orientation, market-focused learning (MFL), and employees' perceptions of firm performance within a service-provision context. It also considers the moderating effect of low and high levels of perceived market-turbulence (LMT vs. HMT) on the relationships between these concepts.

**Design:** PLS-SEM was employed to test the hypothesised relationships using survey responses from 198 employees of a leading multi-branch travel agency in Iran.

**Findings:** The findings demonstrate that CPMS positively influence MFL and, in doing so, have a positive effect on perceptions of firm performance. However, the findings also suggest that CPMS negatively influence entrepreneurial orientation, and therefore can also negatively influence perceptions of firm performance. Further, the relationships between CPMS, entrepreneurial orientation, MFL, and firm performance are stronger for HMT when compared to LMT for all relationships.

**Practical Implications:** Industry managers should adapt their CPMS to include measures specific to intra-organisational entrepreneurship and innovation, and should pursue greater understanding of changing customer preferences.

**Originality/Value:** This study highlights the importance of MFL as a means of avoiding the negative impact of underdeveloped market research on performance in the turbulent Iranian context. Contrary to previous literature, it provides an example of how CPMS can negatively influence entrepreneurial orientation in such environments.

**Keywords:** Performance measurement; Market-focused learning; Entrepreneurial Orientation; Market turbulence

## 1. Introduction

Directed by demands for superior evaluation of the market and competitive business environment, hospitality and tourism organisations devote considerable resources to measuring performance. Focus typically centres on improving and assessing organisational learning, innovation, and risk indicators, and developing performance measurement systems, which in-turn may influence firm performance (Homburg *et al.*, 2012). While Magno *et al.* (2017) studied the importance of performance measurement and knowledge-use in hospitality and tourism firms in developed markets, little research acknowledges the relationship between performance measurement, market-focused learning (MFL), entrepreneurial orientation, and the performance of organisations situated in turbulent markets. Thus, this study aims to explore the relationship between these variables in a developing, under-researched context: Iran.

Despite the sanctions imposed by the international community, the Iranian hospitality and tourism industry continues to grow (Curran *et al.*, 2018). By 2022, tourism is expected to account for 7.2% of the country's GDP, with 670,000 jobs directly related to the sector. Yet, while over 5.5million international tourists visited Iran in 2017, internal travel dominates the industry, with 79% of direct spending attributable to domestic tourism (WTTC, 2017). Indeed, international tourism is often restricted to those travelling for business, inbound religious visitors to Shia Islam's holiest sites, or domiciles departing on pilgrimage (e.g., Hajj or Umrah) (Gannon *et al.*, 2017).

Nevertheless, Iran's international appeal continues to grow, with rural and inbound medical hospitality and tourism flourishing (Moghimehfar and Nasr-Esfahani, 2011). Coupled with the relative inexperience of the indigenous population in undertaking travel for leisure (Taheri *et al.*, 2018), this has resulted in an abundance of travel agencies emerging to service this burgeoning demand. However, it has created an increasingly saturated market, with some travel agencies struggling to survive and a small cohort of large organisations dominating the sector. Smaller agencies typically focus on visa-procurement for religious pilgrims, and many

struggle to cover their expenses in this competitive landscape (Jafari and Scott, 2010). Therefore, a number of challenges face those managing Iranian hospitality and tourism firms, such as travel agencies. These include how to: stimulate growth; accurately measure performance; foster intra-organisational entrepreneurship; and understand competitor actions and customer desires, while simultaneously reacting to conditions inherent to the turbulent Iranian context.

In response, many organisations implement performance measurement systems (PMS). Performance measurement represents the process through which data on performance indicators is collected, evaluated, analysed, and utilised (Samsonowa, 2012). While its foundations lie in organisational control theory, growing calls suggest that the main purpose of performance measurement should be ‘organisational learning’ (Davenport, 2006). A well-designed PMS, which engages employees in conversations centred on firm performance, can stimulate entrepreneurial orientation, improve learning outcomes, and increase firm performance (Bititci, 2015). Through MFL and entrepreneurial orientation, PMS enable firms to become more responsive within turbulent markets; reacting better to customer demands whilst achieving cost reductions (Nudurupati *et al.*, 2011). Within hospitality and tourism, studies on performance measurement typically focus on financial performance (Sainaghi *et al.*, 2017), with discourse often fixated on hotel profitability (Sainaghi, 2010). However, the frequently intangible services provided by hospitality and tourism organisations demand a more nuanced approach (Huang, 2008). This is typically referred to as comprehensive performance measurement, and “provides a certain breadth, reflects strategy and yields information about cause-and-effect relationships” (Homburg *et al.*, 2012, p.1) – presenting a more detailed insight into firm performance.

Further, hospitality and tourism firms are not immune to the need for entrepreneurial innovation, where traditional destination-focused attributes are superseded by the need to offer distinctive products and services in order to flourish (Gannon *et al.*, 2017). Thus, this study responds to calls for further investigation of performance measurement in hospitality and tourism firms by considering antecedent factors contributing to firm performance (Sainaghi *et al.*, 2017). In doing so, it eschews the hotel-centric focus of performance measurement literature by focusing on travel agency performance (Sainaghi, 2010). It is therefore driven by the following

questions: (1) what effect do PMS have on entrepreneurial orientation, MFL and employees' perceptions of firm performance? (2) How do employees' perceptions of market-turbulence influence the relationship between PMS, entrepreneurial orientation, MFL, and firm performance?

## **2. Theoretical model and hypotheses development**

### *2.1 Performance measurement*

Performance measurement is critical in supporting and directing managerial decision-making and improving firm performance (Smith and Bititci, 2017). However, extant literature debates the meaning and machinations of the term (Samsonowa, 2012). Neely *et al.* (1995 p.80) consider it “the process of quantifying the efficiency and effectiveness of action” within organisational units. This echoes the cost-accounting perspective, where performance is measured through defined and distinct financial and productivity improvements. However, there has been a move towards incorporating non-financial dimensions into PMS, aimed at developing a more robust overview of firm performance (Neely *et al.*, 1995). This perspective posits that the term refers to “setting goals, developing a set of performance measures, collecting, analysing, reporting, interpreting, reviewing and acting on performance data”, and that it is essential for all organisations (Smith and Bititci, 2017, p.1210). Here, there are three crucial elements: (1) the development and collection of performance measurement data, (2) the subsequent analysis and interpretation of this data, and (3) utilising any information gleaned in order to improve performance (Smith and Bititci, 2017).

The theoretical foundation of performance measurement stems from cybernetics and control systems theories. This developed into organisational control (Cardinal *et al.*, 2004) and management control (Simons, 1994) in two separate but related fields (organisational behaviour and management accounting). These theories contend that organisational control is comprised of two distinctly different but interrelated dimensions: ‘rational’ and ‘social’ controls (Tessier and Otley, 2012). Rational Control refers to technical, planned, bureaucratic, and structural elements of the organisation (e.g., business planning, performance measures and targets, procedures, rewards, and disciplinary routines). Conversely, Social Control refers to

cultural and behavioural aspects of the organisation: values, collaborative working, participatory decision-making, and information sharing (Smith and Bititci, 2017).

To this end, the late-20<sup>th</sup> century witnessed a paradigm shift with regards to interest in, and understanding of, the role of performance measurement (Neely *et al.*, 1995). A broader focus emerged in response to criticism of the traditional approach, such as its: short-term orientation (Hayes and Abernathy, 1980); lack of insight into what to change in order to improve future performance (McNair *et al.*, 1990); failure to consider the impact of factors external to the organisation (Kaplan and Norton, 1992); myopic recognition of tangential issues (e.g. customer service and employee satisfaction) in contributing to overall performance (Birchard, 1995). Thus, more 'comprehensive' PMS incorporating both financial and non-financial measures emerged. Dimensions such as product/service quality, flexibility, customer satisfaction, and employee development were incorporated into PMS (Hayes and Abernathy, 1980; Ishikawa, 1985; Birchard, 1995). Notable early examples of this include the 'Balanced Scorecard' and the 'Tableau de Bord'.

Homburg *et al.* (2012) consider these frameworks 'comprehensive performance measurement systems' (CPMS). Central to this is their degree of comprehensiveness, underpinned by three components: breadth; strategy-fit; and the volume of data concerning cause-and-effect relationships produced. 'Breadth' refers to the detailed picture provided by various financial and non-financial performance criteria, which are based on historical information *and* contemporary understanding of market trends and process improvements. Another essential conceit is how CPMS fit with the overall strategy of the organisation, and whether it reflects the firm's strategic targets. The third component relates to whether CPMS can provide information on cause-and-effect relationships across the value chain. While the need for comprehensive performance measurement is established (Neely *et al.*, 1995), little research exists on how the implementation of these systems holistically influences firm behaviour, particularly with regards to how information is collected, analysed, and utilised in order to generate entrepreneurial solutions to managerial challenges, and how these antecedent factors subsequently impact upon firm performance.

## 2.2 Market-focused learning (MFL)

Market-focused learning (MFL) refers to how firms attempt to understand the market they operate within and how they subsequently analyse, operationalize, and disseminate this information. Industry norms, firm structure, and the wider business environment typically influence MFL (O'Cass and Weerawardena, 2010). Market information emerges from various sources, with insights relating to suppliers, customers, and competitors particularly illuminating. When MFL is strong, outcomes related to increased competitive advantage emerge (Calantone *et al.*, 2002). Here, employee satisfaction may be born from increased trust and autonomy (Baumgarth and Schmidt, 2010), and MFL can provide organisations with the opportunity to adopt innovative technological advancements from external bodies (Krasnikov and Jayachandran, 2008). Weerawardena (2003) stresses the importance of MFL in the context of innovation and entrepreneurship as, without MFL, a firm cannot easily innovate or develop a competitive advantage.

Therefore, MFL is vital for organisations hoping to discover new practices by considering the market outside of the confines of their own research, development, and training initiatives (Ubeda-Garcia *et al.*, 2014). As MFL can engender and maintain competitive advantage, well-utilised learning and intelligence may increase overall performance (Vorhies and Morgan, 2005). However, due to the non-financial nature of much of this information, traditional performance measurement parameters often neglect to tell the whole story and alternate models of performance measurement may be required to capture their impact. Thus:

**H1.** CPMS positively affect MFL.

## 2.3 Entrepreneurial orientation

In congruence with the hope of gaining insight into innovations and developments across their industry through MFL, many firms encourage an entrepreneurial culture in pursuit of competitive advantage (Zellweger and Sieger, 2012). This 'entrepreneurial orientation' is underpinned by distinct but intertwined elements, which together influence the extent of entrepreneurial focus within an organisation (Martin and Javagi, 2016). These elements typically consider how

innovative the organisation is, its prevailing attitude towards risk, and how proactively it identifies and pursues new business opportunities (Roxas and Chadee, 2013). The first dimension, innovativeness, refers to the attitude towards (and acceptance of) innovative practices and processes (Hjalager, 2010). Entrepreneurially oriented organisations place managerial impetus on pursuing innovative ideas and implementing technological innovations based on market research (Jogarathnam and Tse, 2006). Further, managerial acceptance and the ease of implementation of new ideas and processes are important when assessing the entrepreneurial orientation of a firm (Roxas and Chadee, 2013).

The second entrepreneurial orientation dimension concerns firms' attitudes towards risk, which are key to decision-making, research and development, and product/service introduction. Risk-averse organisations are more conservative with regards to decision-making, particularly in relation to major projects, and are thus considered to be less entrepreneurially oriented (Roxas and Chadee, 2013). Similarly, such organisations often rely upon granular project-approval processes, where new projects progress on a stage-by-stage basis in order to minimize disruptive risk (Kreiser *et al.*, 2010). Conversely, entrepreneurially-oriented organisations symptomatically approve a greater number of projects; pursue initiatives with uncertain returns; and are eager to avoid stagnation (Martin and Javalgi, 2016). Organisations with high levels of entrepreneurial orientation are therefore eager to pursue opportunities to implement new ideas and projects in a less-restrictive manner (Zellweger and Sieger, 2012).

Finally, proactiveness is concerned with the active and aggressive pursuit of initiatives and opportunities with the intention of increasing competitive capabilities (Roxas and Chadee, 2013). This is characterized by the voracious pursuit of new business opportunities, a sustained appetite for being first-to-market, and a desire to avoid stagnation (Hjalager, 2010). Thus, entrepreneurial organisations where difficult-to-measure characteristics such as product and project innovation, being first to introduce new experiences, and proactively pursuing new business opportunities are deemed paramount may benefit from well-designed CPMS. As such:

**H2. CPMS positively affect entrepreneurial orientation.**



## 2.4 Firm Performance

Understanding competitors, the market, and ways to increase market share through MFL is essential in order to improve firm performance in competitive environments (Magno *et al.*, 2017). Here, ‘innovativeness’ is crucial, and is often considered the ‘missing-link’ between MFL and firm performance (de Grosbois, 2012). Extant literature suggests that there is a positive relationship between entrepreneurial orientation and firm performance (Rauch *et al.*, 2009). However, the extent of this relationship varies, often due to differences in the size and sectors of the companies analysed. For example, micro-enterprises experience stronger relationships between firm performance and entrepreneurial orientation, and non-high-tech firms experience weaker relationships than high-tech firms (Rauch *et al.*, 2009).

As overall firm performance is comprised of a number of financial and non-financial attributes, it is possible that organisations measuring both through CPMS may perform better. Homburg *et al.* (2012) suggest that firms with a lower degree of differentiation, lower market complexity, and operating within stagnant markets may benefit less from CPMS. Overall, performance can be considered both from an employee perspective, a customer perspective, and by using traditional accounting performance measures, along with considering market effectiveness (Vorhies and Morgan, 2005). Therefore:

**H3.** MFL positively affects firm overall performance.

**H4.** Entrepreneurial orientation positively affects firm overall performance.

**H5.** CPMS positively affect firm overall performance.

## 2.5 Employees’ perception of market-turbulence

Kohli and Jaworski (1990 p.14) define market turbulence as “changes in the composition of customers and their preferences”. Prior studies explore the moderating effect of employees’ perceptions of market-turbulence on organisational performance (Peter *et al.*, 2018), and Diamantopoulos and Hart (1993) suggest that if customer preferences and segments are unstable firms must embrace MFL to retain market share and improve performance. Firms operating within highly turbulent environments (HMT) are also more likely to be entrepreneurially oriented in order to

satisfy customer demands, react to unpredictability, and subsequently achieve their performance targets (Peter *et al.*, 2018). Conversely, Tsai and Yang (2013) suggest that firms operating in low-turbulence environments (LMT) will be less likely to benefit from improved performance as a result of innovativeness if competition is low. In environments that require extensive application of MFL, Pekkola *et al.* (2016) propose that environmental factors (which cause a degree of market-turbulence) should be incorporated into PMS. Reinforcing this, Nudurupati *et al.* (2011) argue that for PMS to be effective in turbulent environments they must be designed with flexibility in mind, with their measures reviewed regularly to ensure congruence with the changing environment (Peter *et al.*, 2018). Thus:

**H6a.** There is a significant difference between the effect of CPMS on MFL in HMT and LMT.

**H6b.** There is a significant difference between the effect of CPMS on entrepreneurial orientation in HMT and LMT.

**H6c.** There is a significant difference between the effect of MFL on employees' perceptions of firm performance in HMT and LMT.

**H6d.** There is a significant difference between the effect of entrepreneurial orientation on employees' perceptions of firm performance in HMT and LMT.

**H6e.** There is a significant difference between the effect of CPMS on employees' perceptions of firm performance in HMT and LMT.

### **3. Research Method**

#### *3.1 Sample and data collection*

Data was collected from Iranian travel agency employees in 2016. The unit of analysis is an Iranian travel agency with multiple outlets across two large cities. The agency operates in two distinct markets; one with low levels of turbulence and the other with high levels of turbulence. In the high turbulence market, in comparison to the low turbulence market, customer demand is more uncertain, the product is more complex and customer requirements change over time. The agency employs 260 people who deal with both markets simultaneously. The company measures profitability, sales growth (market effectiveness) and customer satisfaction. The employees are aware of the dynamics between the two types of market, alongside the three main components of company performance.

The majority of studies into organisational behaviour in the travel service context have been conducted in America or Europe (Wells *et al.*, 2016). This study addresses this gap by drawing upon a sample of Middle-Eastern travel agency employees. This travel agency is comprised of six branches, with interconnected marketing management strategies, located across two major cities in Iran. This setting is illuminative due to the complex nature of the service, where employees regularly engage with internal PMS and external customers. A back-translation procedure was employed (English-Farsi) to avoid language misunderstandings, and two local academic native Farsi speakers were consulted in order to verify the questionnaire structure. 20 employees were selected to participate in a pilot-stage prior to data collection, with the wording of the questionnaire modified based on feedback collected at this juncture.

The Total Design Method (Dillman *et al.*, 2008) was used to administer questionnaires (including pre-notification letters and emails, questionnaire packages, and reminder/follow-up letters and emails) to all 260 travel agency employees. 198 fully completed questionnaires were returned, yielding an acceptable response rate of 76% (Fowler, 2002). According to Hair *et al.* (2017), the sample size should be 10 times the largest number of indicators used to measure a single construct. Here, the highest number of indicators belongs to 'MFL' (indicating a minimum sample size of 70), thus the sample is larger than the suggested threshold. Cohen (1992) and Hair *et al.* (2017) also contend that 51 responses are the minimum required to detect  $R^2$  values between 0.25 and 0.50 in any of the endogenous constructs in PLS-SEM modelling at a significant level (5%). While this may seem low, it echoes extant research embracing this research strategy (cf. Morgan and Strong, 2003).

Additionally, beyond Dillman *et al.*'s (2008) protocols, two different analyses were used to overcome self-selection bias. First, the nonresponse bias test using Armstrong and Overton's (1977) recommendations was employed. Early and late versions of the questionnaire were compared for systematic differences in demographic variables (gender, age, education level); no significant difference was identified at  $p < 0.05$ . Second, Chi-square goodness-of-fit analysis was used to investigate whether there were systematic differences between the main sample and the population in terms of cities and different branches. The results indicated no

systematic differences. Further, the authors checked that the employees' assessment of performance was consistent with the senior managers' assessment of performance in relation to competitors within the sector.

Most respondents were aged between 18 and 39 years (66.7%); 45.5% were female. Overall, 8.1% had basic education, 18.7% completed high school, 48% held undergraduate/college diplomas, and the remainder (25.3%) held postgraduate degrees. In terms of role - 23.7% were unskilled (e.g., trainees); 25.8% worked in 'marketing/internal communications'; 32.2% were tour guides or 'external communications'; and the remainder in 'operations/accounting' (27.3%). All participants were aware of the organisation's strategy, marketing plans and PMS. All employees (including unskilled labour) had attended various performance-related workshops provided by the firm. Further, the firm organises regular staff meetings, where management and marketing plans are communicated to all employees. A newsletter is also provided to ensure that employees remain up-to-date with the latest developments, and employees are encouraged to contribute to the setting of new goals and quantifying the efficiency and effectiveness of action including diversity, strategy-fit, and cause-and-effect relationships.

### *3.2 Measures*

Measures were adapted from extant research. The second-order CPMS construct is comprised of three dimensions: diversity (5-items); strategy-fit (2-items); cause-and-effect relationships (3-items) (Homburg *et al.*, 2012). These dimensions have been applied previously in managerial accounting and marketing studies (Hall, 2008; Homburg *et al.*, 2012). To investigate performance measurement in the travel agency context, employees rated their firm's CPMS using a seven-point Likert scale (1 'not at all'; 7 'to a great extent'). The 7-item MFL construct was adapted from O'Cass and Weerawardena (2010). MFL has been investigated across marketing management studies, where it is suggested as a vehicle through which firms can improve capability by increasing competitor and customer knowledge (O'Cass and Weerawardena, 2010). Employees were asked to indicate how firm learning was influenced by customer preferences and competitor actions using a seven-point scale (1 'not effective'; 7 'very effective'). The second-order entrepreneurial orientation scale was adapted from Martin and Javalgi (2016), consisting of three dimensions:

innovativeness (3-items); reactivity (3-items); risk-taking (2-items). This “reflects the firm-level processes, practices, and decision-making style...of entrepreneurial organisations” (Martin and Javalgi, 2016, p.2047) and is used as a multidimensional construct in marketing management studies (Hernández-Perlines, 2016). Respondents were asked to indicate their firm’s process, practices and decision-making style using a seven-point scale ranging from 1 ‘not at all’ to 7 ‘to a great extent’, with a mid-point of ‘to some extent’.

Previous studies investigating firm performance (Bititci *et al.*, 2013) suggest that using lagging indicators, such as revenue (market effectiveness) and profitability, together with a key leading indicator (customer satisfaction) in relation to the sector in which the firm operates is an effective way of assessing and comparing performance. Thus, employees were asked to provide a subjective assessment of their firm’s performance relative to competitors in the sector (Vorhies and Morgan, 2005). The instruction was to: “evaluate the performance of your business over the past year (twelve months) relative to your major competitors”. Perceptions of firm performance were measured via the employees’ subjective evaluation of three areas: customer satisfaction; anticipated profitability (“using perceptual scales related to performance over the past 12 months and expectations for the following year”) (Vorhies and Morgan, 2005, p.82) and market effectiveness (“using a scale that tapped the degree to which the firms’ market-based goals has been archived”) (Vorhies and Morgan, 2005, pp.82-83). This included a seven-point scale (1 ‘much worse than competitors’ to 7 ‘much better than competitors’). Firm performance was considered as a second-order multi-item construct underpinned by three distinct dimensions (customer satisfaction (4-items), market effectiveness (4-items), anticipated profitability (4-items)), adapted from Vorhies and Morgan (2005). This multidimensional approach to firm performance is widely applied in management and marketing scholarship as it captures both qualitative and quantitative aspects of perceived firm performance (Tzokas, *et al.*, 2015).

Peter *et al.* (2018) argue that it is vital to distinguish low and high levels of change and unpredictability via employees’ subjective evaluations of the business environment. This requires two conventional dimensions to describe the unpredictability of customer preferences: low market-turbulence and high market-

turbulence. For testing employees' perceptions of market-turbulence as a moderating factor, 3-items were adapted from Keszey and Biemans (2016). Employees indicated how turbulent they perceived the market to be, influenced by changes in the composition and preferences of customers, using a seven-point scale (1 'strongly disagree'; 7 'strongly agree'). These were: 'new customers tend to have product-related needs that differ from those of our existing client', 'in our kind of business, customers' product preferences change over time', and 'our customers tend to look for new products all the time'. Means of these items were calculated, and 'employees' perceptions of market-turbulence' was computed based on the new mean construct in *low* 1 (0-4) and *high* 2 (4-7) groups.

## **4. Results**

### *4.1 Common-method variance (CMV)*

As with all self-reported data, there is a possibility for CMV (Podsakoff *et al.*, 2003). Therefore, dependent and independent variables were located separately within the questionnaire. Two techniques were employed to assess CMV. First, Harman's one-factor test was conducted on all constructs and their respective items (Podsakoff *et al.*, 2003). The Eigenvalue unrotated Exploratory Factor Analysis (EFA) detected 11 factors, explaining 68.731% of the total variance. The highest portion of variance explained by one factor was 16.930%; the Kaiser-Meyer-Olkin (KMO) was 0.743 ( $>0.5$ ); and Bartlett's Test of Sphericity was significant at .000 ( $p < 0.05$ ) (Hair *et al.*, 2010). Echoing Wells *et al.* (2016), a common method factor was also used. The findings demonstrate the average substantively explained variance of the indicators is 0.65, whereas the average method-based variance is 0.016 (40:1). The majority of factor loadings are non-significant; CMV is not a concern for this study.

### *4.2 Analytical technique*

The conceptual framework and hypothesis were assessed using PLS-SEM, as it is suitable for testing complex models with relatively small sample sizes, and for reflective, formative and higher-order constructs (Hernandez-Perlines, 2016). PLS-SEM (with similar sample sizes) has been used in organisational studies (O'Cass and Weerawardena, 2010). Previous studies also use similar sample sizes for this study's

constructs. For example, Homburg *et al.* (2012) used a sample of 201 when investigating CPMS and O'Cass and Weerawardena (2010) drew upon 247 responses when examining MFL. In line with extant research, multiple first-order dimensions serve as the foundations for the higher-order measures (CPMS, firm performance, and entrepreneurial orientation). PLS-SEM can calculate non-normal distributional properties using kurtosis and skewness values, with acceptable values falling between -3 and +3. Here, the assumption of normality was violated. SmartPLS software was used to test the conceptual model (5,000 subsamples) (Ringle *et al.*, 2014).

#### 4.3 Analysis of measurement model

For the reflective constructs, convergent validity was investigated via composite reliability (CR), factor loadings, and average variance extracted (AVE). **Table I** demonstrates that all factor loadings exceeded the threshold value (0.6), with significant *t*-values (Hair *et al.*, 2010). CR exceeded the recommended value (0.7), and AVE surpassed the threshold (0.5) for all constructs (Hair *et al.*, 2010) (**Table I**). Two tests were used to establish discriminant validity. As per Fornell and Larcker (1981), **Table II** illustrates that the square root of the AVE of all constructs was greater than all other cross correlations, with no correlation reaching the 0.7 threshold (**Table II**). Next, the heterotrait–monotrait (HTMT) ratio of correlations approach was employed (Henseler *et al.*, 2015). HTMT values ranged from 0.183-0.716: below the recommended value (0.85). HTMT<sub>inference</sub> criterion (using complete bootstrapping) was checked; all HTMT values differed significantly from 1 (Wells *et al.*, 2016). Hence, discriminant validity was established.

#### [Table I and II]

With the reliability and validity of first-order composites confirmed, this study operationalized CPMS, entrepreneurial orientation and employees' perception of firm performance as a second-order composite model (Hernandez-Perlines, 2016). Following Henseler *et al.* (2016), first-order composites of CPMS (diversity, strategy-fit, cause-and-effect relationships), entrepreneurial orientation (innovativeness, proactiveness, riskiness) and employees' perception of firm performance (customer satisfaction, market-effectiveness, anticipated profitability) are uncorrelated. As each first-order composite captures a specific aspect ratio, the first-order composites are not transposable. The composite higher-order constructs were validated through the

weights of the first-order composites, significance of weights, and multicollinearity (Hernandez-Perlines, 2016). The weights of first-order composites to respective higher-order composites were all significant (**Table I**). The lack of collinearity was confirmed using the variance inflation factor (VIF), with values  $<5$  providing evidence of no multicollinearity (Hair *et al.*, 2017). Therefore, CPMS, entrepreneurial orientation, and employees' perceptions of firm performance exist as higher-order composites characterised by their underlying first-order constructs.

#### 4.4 Analysis of the structural model

Prior to examining the hypothesized relationships, the predictive relevance ( $Q^2$ ), effect sizes ( $f^2$ ), Standardized Root Mean Square Residual (SRMR) and Normed Fit Index (NFI) were assessed. The blindfolding procedure, utilising cross-validated redundancy, demonstrates that each  $Q^2$  value exceeded 0. For this study,  $Q^2$  values are: MFL (0.126); entrepreneurial orientation (0.141); employees' perceptions of firm performance (0.112). Cohen's effect sizes recommendation was employed to measure  $f^2$  (Cohen, 1988); all  $f^2$  values (0.072-0.181) for significant paths exceeded the recommended value. The model's SRMR was 0.062 - below the recommended value (0.08) (Henseler *et al.*, 2014). The NFI value for the model was also acceptable (0.92) ( $NFI > 0.90$ ) (Henseler *et al.*, 2016). CPMS positively and significantly influenced MFL ( $\beta = 0.391$ ,  $p < 0.001$ ), whereas it negatively influenced entrepreneurial orientation ( $\beta = -0.465$ ,  $p < 0.001$ ). Market-focused learning ( $\beta = 0.217$ ,  $p < 0.001$ ) and CPMS ( $\beta = 0.198$ ,  $p < 0.001$ ) positively affected employees' perceptions of firm performance. Conversely, entrepreneurial orientation negatively influenced employees' perceptions of the organisation's performance ( $\beta = -0.211$ ,  $p < 0.001$ ). The model explained MFL (35.3%), entrepreneurial orientation (31.6%), and employees' perceptions of firm performance (31.2%).

#### 4.5 Testing the moderating effects of perceived market-turbulence

PLS-based multi-group analysis (MGA) was used to evaluate whether differences between those perceiving LMT and HMT were significant. Henseler *et al.* (2016) recommend the use of the Measurement Invariance of Composite Models (MICOM) three-step approach: (a) configural invariance, (b) compositional invariance, and (c) scalar invariance (equality of composite means and variances).



The analysis of differences in loadings between groups for all items under their underlying constructs indicated that the differences between the factorial loads of both LMT and HMT groups are non-significant ( $p>0.05$ ). **Table III** verifies the compositional and scalar invariance guaranteeing ‘full measurement invariance’.

### [Table III]

**Tables IV** and **V** demonstrate CR, AVE, loading values, weights and VIF. The findings demonstrate the convergent validity of the measurement model for each group of data (Hair *et al.*, 2017). HTMT values ranged from 0.139-0.619 (LMT), and between 0.113-0.679 (HMT), considerably below the threshold value (0.85) (Henseler *et al.*, 2015). Thus, discriminant validity was established. **Table IV** shows  $R^2$  and  $Q^2$  values for HMT and LMT groups. **Table V** indicates the parameter estimates for the hypothesized relationships for each group and the probability of differences in the parameters between each group.

### [Table IV and V]

The findings demonstrate that the influence of CPMS on MFL was stronger for HMT ( $\beta=0.419$ ,  $p<0.001$ ) than LMT ( $\beta=0.253$ ,  $p<0.001$ ), and that the influence of CPMS on entrepreneurial orientation was stronger for HMT ( $\beta=-0.551$ ,  $p<0.001$ ), compared to LMT ( $\beta=-0.389$ ,  $p<0.001$ ). The results demonstrate the influence of MFL on employees’ perceptions of firm performance was greater for HMT ( $\beta=0.305$ ,  $p<0.001$ ) than LMT ( $\beta=0.128$ ,  $p<0.01$ ), and the influence of entrepreneurial orientation on employees’ perceptions of firm performance was stronger for HMT ( $\beta=-0.375$ ,  $p<0.001$ ) compared with LMT ( $\beta=-0.201$ ,  $p<0.001$ ). Finally, the findings demonstrate that the influence of CPMS on employees’ perceptions of firm performance was stronger for HMT ( $\beta=0.239$ ,  $p<0.01$ ) compared to LMT ( $\beta=0.149$ ,  $p<0.01$ ). Two nonparametric multi-method MGA approaches were used to demonstrate the differences between paths in the model: bootstrap-based MGA (Henseler *et al.*, 2009) and the Permutation Test (Rasoolimanesh *et al.*, 2017). Both techniques use a  $p$ -value to investigate differences between path coefficients ( $<0.05$ ), indicating significant differences across two specific groups. The MGA results confirm that there are significant differences between LMT and HMT groups for all direct paths, supporting **H6a-H6e**.

#### 4.6 Post-hoc analysis (indirect effects)

The PLS-SEM results suggest possible mediating relationships. Bootstrapping analysis, using *t*-values and the 95% confidence interval (CI), was employed to investigate the significance of these indirect relationships. The findings demonstrate that CPMS indirectly impact employees' perceptions of firm performance through entrepreneurial orientation [Indirect path:-0.235; *t*-value: 3.668; 95% CI=-0.204:-0.249]. As the direct influence was significant, the results indicate that entrepreneurial orientation partially mediates the influence of CPMS on firm performance. Additionally, CPMS indirectly influences employees' perceptions of firm performance through MFL [Indirect path: 0.331; *t*-value: 5.317; 95% CI=0.289:0.352]. As this was again significant, MFL partially mediates the effect of CPMS on firm performance.

## 5. Discussion

The adoption of appropriate performance indicators is vital in hospitality management. Given the diverse empirical evidence and repeated calls for better evaluation of performance measurement and firm performance in current discourse (Sainaghi *et al.*, 2017), the results demonstrate how CPMS, MFL and entrepreneurial orientation contribute to travel agency performance. This study compared HMT and LMT in relation to the effects of CPMS on MFL, entrepreneurial orientation, and firm performance. Here, MGA results reveal significant differences between HMT and LMT regarding the direct relationships between CPMS, MFL, entrepreneurial orientation and firm performance; each was significantly higher for HMT than LMT (**Table V**).

### 5.1 Theoretical implications

With regards to the first research question: '*what effect do PMS have on entrepreneurial orientation, MFL and employees' perceptions of firm performance?*' the findings are somewhat contradictory. First, CPMS positively influences MFL (**H1**), which in-turn has a positive effect on overall firm performance (**H3**). Further, CPMS positively and directly affects firm performance (**H5**). This supports **H1**, **H3**, and **H5** by confirming that CPMS facilitate organisational learning and improve

performance (Bititci *et al.*, 2012). However, the findings also suggest that CPMS *negatively* influences entrepreneurial orientation (**H2**) and therefore has an *indirect negative* effect on firm performance (**H4**).

In theorising the idiosyncratic nature of the findings, this study draws to mind the rational and social control dimensions of organisational control theory (Smith and Bititci, 2017). Here, the positive relationships found between CPMS, MFL, and performance (**H1**, **H3**, **H5**) are attributable to the nature of the measures used (rational controls) and *how* these measures manage performance (social controls). The results reveal that the diversity, structure, and causal relationships of PMS (rational controls), together with the ‘command-and-control’ management style (social controls) prevalent in the Middle-East (Jwijati and Bititci, 2015), direct management and employee attention toward financial metrics such as revenue and profit. While this reinforces the need to understand market and customer requirements, it may create a culture of fear where psychological safety is low; encouraging employees to eschew the exploration, experimentation, and risk-taking required to stimulate entrepreneurial behaviour and innovation (Hamel, 2011).

Regarding the second research question, ‘*how do employees’ perceptions of market-turbulence influence the relationship between PMS, entrepreneurial orientation, MFL, and overall performance?*’ the findings reveal significant differences between HMT and LMT. Here, market-turbulence includes the emergence of new customers, their changing needs, and their desire for new products. Higher levels of market-turbulence stimulate a more positive relationship between CPMS and MFL (**H6a**). Further, the impact of both MFL and CPMS on overall performance (**H6c** and **H6e**) is positive and higher. However, when market-turbulence is low the relationship between CPMS and MFL becomes negative (**H6a**). This again confirms the utility of CPMS in aiding organisational learning, particularly in dynamic environments where various factors are susceptible to change (Nudurupati *et al.*, 2011). Indeed, extant performance measurement literature encourages frequent reviews of key performance indicators and firm performance in order to aid organisational learning and stimulate proactive decision-making (Smith and Bititci, 2017).

The findings also reveal that the higher the level of market-turbulence the stronger

the negative impact of CPMS on entrepreneurial orientation (**H6b**), and the negative impact of entrepreneurial orientation on perceptions of firm performance (**H6d**). Again, this relationship may emerge from the interplay between rational and social controls. PMS strongly aligned to financial outcomes (rational controls), deployed in a directive ‘command-and-control’ management style (social controls), may suppress entrepreneurial behaviour. This echoes the tension between exploitation and exploration (O’Reilly and Tushman, 2008), where exploitation represents organisational focus towards the efficient and effective delivery of existing business models, and exploration encompasses organisational experimentation with regards to new approaches, products, and business models.

Thus, this study provides four significant contributions. *First*, it demonstrates that through organisational control theory in general (and social/rational control dimensions more specifically), scholars can better explain the interaction between performance measurement, MFL, entrepreneurial orientation and firm performance in the hospitality sector. *Second*, in the context of travel agencies operating in turbulent markets, the findings demonstrate that while performance measurement impacts upon MFL and entrepreneurial orientation, this is moderated by *how* CPMS are implemented (social controls). *Third*, the findings contradict the prevailing sentiment that organisations operating within turbulent environments must embrace entrepreneurship and innovation in order to respond to environmental changes faster than competitors (Hamel, 2011). *Fourth*, the authors theorise that this contradiction is manifest through the interplay between the rational and social dimensions of organisational control.

## 5.2 Practical implications

Influenced by Bititci’s (2015) theorisation of the interplay between rational and social controls, this study suggests that social controls (how performance measures are used to manage the performance of the organisation) play a significant role in fostering entrepreneurial orientation. While CPMS stimulate organisational learning and MFL, social controls drive entrepreneurial behaviours. Therefore, the authors stress the need to use CPMS alongside an open, participative management approach to reinforce both MFL and entrepreneurial orientation; key competencies for sustaining and improving performance in turbulent environments (Rauch *et al.*, 2009).

From a managerial perspective, the focused nature of CPMS only partly provides the information required to manage organisational performance. This, combined with a directive management approach, results in managerial decisions based on limited information and a lack of open communication. Therefore, to encourage entrepreneurial behaviour, travel agency managers must adapt in two key areas. First, the scope and structure of their PMS must be reviewed to tweak their focus from financial outcomes (exploitation), to include exploration, entrepreneurship, and innovation-related outcomes. Second, managers must understand customer values, preferences, and changing market dynamics (Keszey and Biemans, 2016). Thus, management routines must change from directive command-and-control tactics towards more open, participative approaches.

Nonetheless, this study reiterates that CPMS are valuable instruments for evaluating financial and nonfinancial measures, and that they can impact on performance and success in travel agencies and similar organisational settings (Magno *et al.*, 2017). However, designing effective and appropriate performance measurement tools is challenging. Relatively little is known about CPMS in the hospitality and tourism sector, the travel agency context, or the Middle-Eastern setting. Within this context, prior studies discussing performance measurement often focus on the financial performance of firms (Huang, 2008; Sainaghi *et al.*, 2017). Thus, this study provides further insight into performance measurement for similar organisations operating across the region (Jwijati and Bititci, 2015). Managers should therefore invest more time into MFL, including information gathering and gaining extensive competitor knowledge in order to avoid the negative impact of underdeveloped market research on firm performance. Finally, in HMT environments, firms should focus on strategic marketing and innovative practices in order to respond to customer preferences, product-related needs, and new product development strategies. This implies that the marketing team should be prepared for such a strategic role and equipped with resources outlining the required new approach. Thus, organisations should invest in preparing appropriate workshops and training sessions for key employees (Ubeda-Garcia *et al.*, 2014).

### *5.3 Limitations and Future Research*

Despite providing a nascent investigation into CPMS's role in stimulating

travel agency performance, some limitations must be acknowledged. First, data was sourced from employees of a multi-branch Iranian travel agency, constraining the generalizability of this study. While this provides a much-needed exploration of the utility of travel agency performance measurement procedures in developing markets, future research could consider different geographical or organisational sources with larger sample sizes. Further, this study emphasises the interplay between performance measures (rational controls) and management style (social controls) (Smith and Bititci, 2017), and how this influences entrepreneurial orientation and organisational behaviour. Thus, future research should further explore this interplay. Finally, data was collected exclusively from employees. To explore perspectives beyond the organisation, additional data should be collected from alternate sources (e.g., customers) via qualitative or mixed-method approaches in order to extend the findings.

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**Table I.** Measurement model assessment.

Items	Loading* **	CR	AVE	Weights** *	VIF
<b>CPMS: Second order</b>					
<b><i>CPMS-Diversity(1)</i></b>		0.848	0.528	0.432	2.32
Provides financial and nonfinancial measures	0.701				
Provides a balanced picture of the marketing function	0.783				
Provides measures of different perspectives (e.g. financial, competitive, customer, innovation, human, internal processes in marketing)	0.704				
Provides besides result-oriented measures (e.g. sales, customer satisfaction) input- (e.g. meeting the budget) and process-related measures (e.g., marketing processes)	0.737				
Puts special weight on customer-, competitor-, and market-related measures	0.703				
<b><i>CPMS-Strategy-fit(2)</i></b>		0.761	0.616	0.499	2.11
Is derived from long-term marketing targets	0.838				
Reflects our marketing strategy	0.727				
<b><i>CPMS-Cause-and-effect relationships(3)</i></b>		0.792	0.559	0.378	2.15
Shows how marketing activities and results are connected	0.795				
Consists of measures which build upon each other	0.729				
Shows cause-and-effect relationships	0.717				
<b>Market-focused learning</b>		0.797	0.597		
Collects information about markets	0.638				
Searches for new ideas through market information	0.649				
Knowledge about market segments	0.794				
Knowledge of competitors	0.671				
Shares information with employees	0.834				
Uses customer and competitor information in innovations	0.752				
Capability to learn allows firm to compete	0.726				
<b>Entrepreneurial orientation: Second order</b>					
<b><i>Entrepreneurial orientation-Innovativeness(1)</i></b>		0.748	0.503	0.405	2.55
Technical innovation based on research results is readily accepted	0.710				
Management actively seeks innovative ideas	0.819				
Innovation is readily accepted in program/project management	0.777				
<b><i>Entrepreneurial orientation-Riskiness(2)</i></b>		0.722	0.574	0.483	1.98
Conservative with major decision	0.683				
New projects are approved stage by stage	0.771				
Support projects where expected returns are certain	0.770				
<b><i>Entrepreneurial orientation-Proactiveness(3)</i></b>		0.764	0.618	0.211	1.26
Look out for business	0.838				
First to introduce new brands	0.727				
<b>Employees' perception of firm performance: Second order</b>					
<b><i>Firm overall performance-Customer satisfaction(1)</i></b>		0.911	0.720	0.387	2.14
Customer satisfaction	0.808				
Delivering value to customers	0.850				
Delivering what customers want	0.865				
Retaining valued customers	0.809				
<b><i>Firm overall performance-Market effectiveness(2)</i></b>		0.790	0.586	0.406	1.65
Market share growth relative to competitors	0.738				
Growth in sales revenue	0.778				
Acquiring new customers	0.625				
Increasing sales to existing customers	0.636				
<b><i>Firm overall performance-Anticipated profitability(3)</i></b>		0.861	0.608	0.381	2.44

Business unit profitability	0.813
Return on investment	0.833
Return on sales	0.728
Reaching financial goals	0.741

Note: \*\*\*3.29 ( $p < 0.001$ ).

**Table II.** Discriminant validity.

Constructs	1	2	3	4	5	6	7	8	9	10	11	12	13
CPMS	n/a												
Cause-and-effect relationships	0.578	<b>0.748</b>											
Anticipated profitability	0.093	0.140	<b>0.780</b>										
Customer satisfaction	0.154	0.179	0.566	<b>0.848</b>									
Diversity	0.523	0.538	0.041	0.115	<b>0.726</b>								
Entrepreneurial orientation	0.465	0.342	0.063	0.015	0.444	n/a							
Employees' perception of firm performance	0.142	0.169	0.581	0.514	0.099	0.047	n/a						
Innovativeness	0.237	0.202	0.017	0.030	0.216	0.505	0.002	<b>0.709</b>					
Market effectiveness	0.132	0.126	0.429	0.461	0.108	0.055	0.406	-0.055	<b>0.765</b>				
MFL	-0.391	-0.324	0.077	0.001	-0.344	-0.209	0.044	-0.114	0.054	<b>0.772</b>			
Proactiveness	0.308	0.164	0.013	-0.048	0.324	0.711	-0.006	0.117	0.035	-0.221	<b>0.786</b>		
Riskiness	0.378	0.311	0.086	0.047	0.344	0.483	0.082	0.106	0.100	-0.099	0.314	<b>0.757</b>	
Strategy-fit	0.799	0.519	0.089	0.107	0.534	0.359	0.113	0.174	0.107	-0.318	0.245	0.292	<b>0.785</b>

**Table III.** Findings of invariance measurement testing permutation.

Composite	c-Value (0=1)	95% CI	Permutation <i>p</i> -value	Compositional invariance?
Diversity	0.997	[0.990,1.000]	0.245	Yes
Strategy-fit	0.977	[0.965,1.000]	0.179	Yes
MFL	0.999	[0.999,1.000]	0.511	Yes
Innovativeness	0.998	[0.997,1.000]	0.456	Yes
Riskiness	0.999	[0.998,1.000]	0.378	Yes
Proactiveness	0.998	[0.996,1.000]	0.339	Yes
Customer satisfaction	0.997	[0.995,1.000]	0.200	Yes
Market effectiveness	0.975	[0.965,1.000]	0.411	Yes
Anticipated profitability	0.974	[0.936,1.000]	0.398	Yes
Composite	Variance difference	95% CI	Permutation <i>p</i> -value	Equal variance?
Diversity	-0.020	[-0.123,0.121]	0.145	Yes
Strategy-fit	-0.098	[-0.173,0.176]	0.278	Yes
MFL	-0.055	[-0.189,0.190]	0.801	Yes
Innovativeness	-0.147	[-0.243,0.151]	0.652	Yes
Riskiness	-0.125	[-0.168,0.112]	0.749	Yes
Proactiveness	-0.138	[-0.233,0.151]	0.447	Yes
Customer satisfaction	0.152	[-0.202,0.200]	0.781	Yes
Market effectiveness	-0.041	[-0.221,0.226]	0.677	Yes
Anticipated profitability	-0.144	[-0.215,0.124]	0.853	Yes
Composite	Mean difference	95% CI	Permutation <i>p</i> -value	Equal mean value?
Diversity	-0.001	[-0.044,0.041]	0.489	Yes
Strategy-fit	-0.003	[-0.041,0.041]	0.701	Yes
MFL	-0.052	[-0.186,0.192]	0.221	Yes
Innovativeness	0.003	[-0.021,0.035]	0.535	Yes
Riskiness	-0.001	[-0.022,0.040]	0.682	Yes
Proactiveness	-0.004	[-0.122,0.123]	0.444	Yes
Customer satisfaction	-0.003	[-0.044,0.043]	0.389	Yes
Market effectiveness	-0.002	[-0.041,0.037]	0.533	Yes
Anticipated profitability	0.044	[-0.166,0.160]	0.479	Yes

**Note:** CI=Confidence Interval.

**Table IV.** Assessment findings of the measurement model (LMT and HMT)

Construct	Range loadings***		CR		AVE		Weight***		VIF		R <sup>2</sup>		Q <sup>2</sup>	
	LMT	HMT	LMT	HMT	LMT	HMT	LMT	HMT	LMT	HMT	LMT	HMT	LMT	HMT
MFL	[0.720,0.838]	[0.606,0.801]	0.729	0.706	0.545	0.541								
CPMS											0.333	0.401	0.134	0.103
<i>Diversity</i>	[0.651,0.801]	[0.621,0.706]	0.855	0.844	0.542	0.521	0.321	0.357	1.332	2.020				
<i>Strategy-fit</i>	[0.704,0.848]	[0.723,0.835]	0.782	0.737	0.643	0.586	0.278	0.367	2.541	2.43				
<i>Cause-and-effect relationships</i>	[0.669,0.755]	[0.779,0.847]	0.877	0.744	0.604	0.597	0.287	0.211	2.235	2.451				
Entrepreneurial orientation											0.298	0.210	0.221	0.276
<i>Innovativeness</i>	[0.703,0.743]	[0.660,0.791]	0.781	0.701	0.546	0.530	0.245	0.341	2.347	2.790				
<i>Riskiness</i>	[0.632,0.752]	[0.687,0.827]	0.711	0.729	0.543	0.504	0.321	0.321	1.235	1.765				
<i>Proactiveness</i>	[0.678,0.903]	[0.604,0.710]	0.805	0.725	0.674	0.569	0.119	0.267	1.678	1.458				
Overall performance											0.421	0.289	0.231	0.211
<i>Anticipated profitability</i>	[0.641,0.732]	[0.623,0.835]	0.872	0.846	0.632	0.579	0.311	0.311	2.541	2.479				
<i>Market effectiveness</i>	[0.708,0.833]	[0.809,0.887]	0.722	0.805	0.534	0.540	0.231	0.351	1.589	1.541				
<i>Customer satisfaction</i>	[0.747,0.801]	[0.723,0.823]	0.881	0.933	0.650	0.776	0.351	0.211	2.611	2.114				

**Note:** \*\*\*3.29 ( $p < 0.001$ ).

**Table V.** Market-turbulence groups: comparison test results.

Paths	Path coefficient (HMT)	CI (HMT)	Path coefficient (LMT)	CI (LMT)	Path coefficient differences	P-value Henseler's MGA	P-value Permutation test	Result
CPMS→MFL (H6a)	0.419** *	[0.370, 0.510]	0.253***	[-0.198, -0.333, 0]	0.166	0.029	0.071	HMT>LMT
CPMS→Entrepreneurial orientation (H6b)	- 0.551** *	[-0.479, -0.598]	-0.389***	[-0.289, -0.458]	0.162	0.017	0.00	HMT>LMT
MFL→Employees' perception of firm performance (H6c)	0.305** *	[0.257, 0.389]	0.128**	[0.89, 0.158]	0.177	0.028	0.021	HMT>LMT
Entrepreneurial orientation→Employees' perception of firm performance (H6d)	- 0.375** *	[-0.276, -0.480,]	-0.201***	[-0.154, -0.289]	0.174	0.052	0.002	HMT>LMT
CPMS→Employees' perception of firm performance (H6e)	0.239**	[0.178, 0.270]	0.149**	[0.105, 0.178]	0.09	0.090	0.027	HMT>LMT

**Note:** \*\*\*3.29 ( $p<0.001$ ); \*\*2.58 ( $p<0.01$ ); \*1.96 ( $p<0.05$ ).